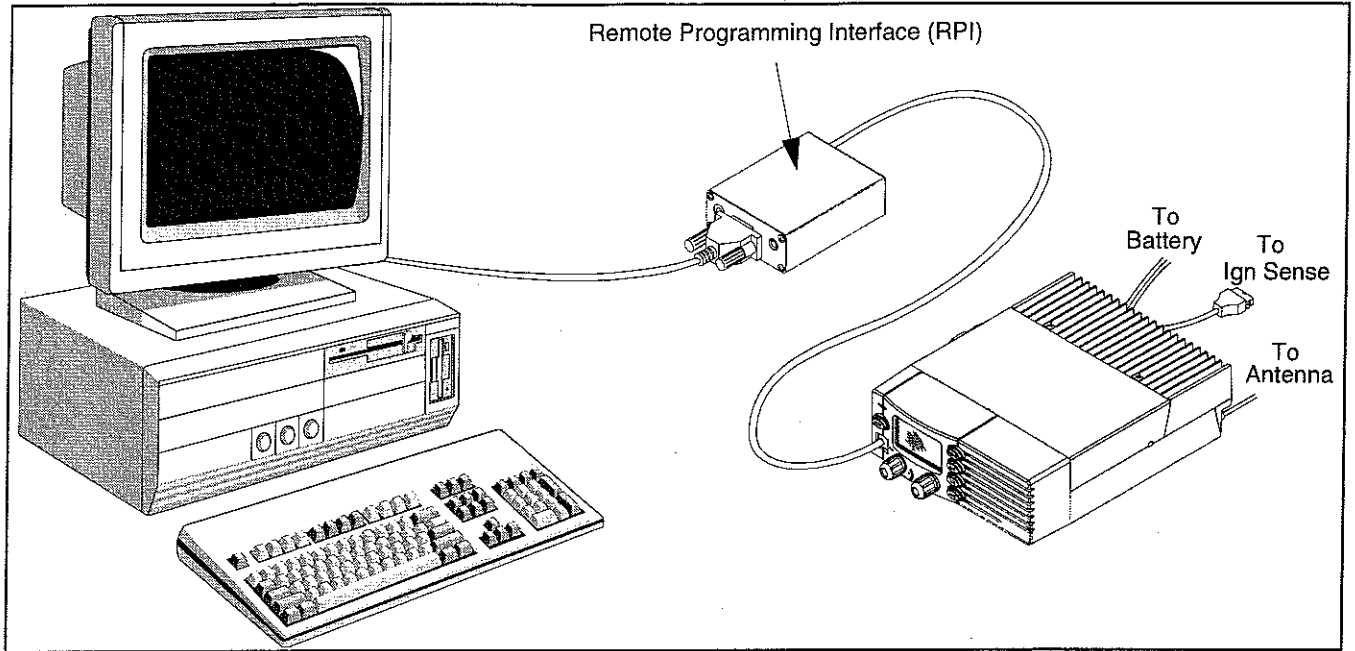


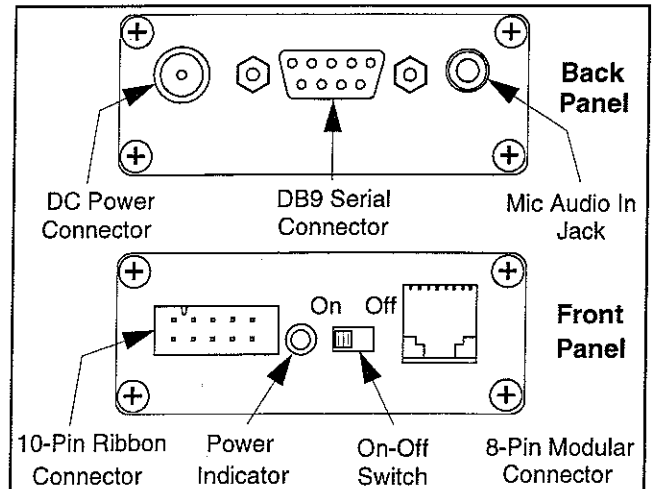
REMOTE PROGRAMMING INTERFACE (RPI)

PART NO. 023-9800-000



GENERAL

The Remote Programming Interface (RPI) provides the required interface between the computer and the transceiver. It converts the RS-232 logic levels of the computer to the TTL levels used by the transceiver and vice versa. This particular RPI (Part No. 023-9800-000) has additional circuitry (a 20-volt supply) required to program the E.F. Johnson 9800-series mobile and 8200-series portable transceivers. It also has a microphone audio jack required to software tune these transceivers. This RPI is backward compatible which means it can also be used to program all other E.F. Johnson transceivers which require an RPI.



CONTROLS AND INDICATORS

DB9 Connector - Standard female DB9 connector used to connect the RPI to the serial port of the computer (see "Programming Cables" which follows).

Microphone Audio Jack - Miniature phone jack used to inject a microphone audio signal into a transceiver connected to the 8-pin modular jack. This is used when aligning the 8200- and 9800-series transceivers.

DC Power Jack - This jack is normally not used because RPI power is provided by the device being pro-

grammed (see "RPI and External Device Power" which follows).

Switch - The function of this switch varies depending on the model of transceiver connected to the RPI. When this switch is off with power applied to the RPI, the front panel power indicator is green. Conversely, when it is on, this indicator is amber. The "on" position grounds the hanger line and enables the 12V and 20V outputs. With remote-mount models, this switch turns transceiver power on and off, and with 8200/8800-series, Summit® DM, and Viking® HT transceivers, the "on" position is used for Flash programming.

Power Indicator - This two-color LED indicates the following:

Green - Indicates that power is applied to the RPI and the preceding switch is "off". If this indication does not come on with transceiver power, there may be a fuse or jumper in the transceiver that should be checked.

Amber - Indicates that power is applied to the RPI and the preceding switch is "on".

10-Pin and 8-Pin Connectors - Used to connect the transceiver to the RPI. The specific connector used depends on the transceiver and programming cable being used (see "Programming Cables" which follows).

PROGRAMMING CABLES

NOTE: The cables from the RPI to the computer and transceiver are not included with the RPI.

RPI to Computer Cable

The RPI connects to the serial port of the computer. Therefore, an unused serial port is required. If the computer has two unused serial ports, connect it to port 1. If port 2 is used, it may have to be selected in the programming software. The software also configures the port for the proper bit rate, bit number, parity, and stop bits.

The computer connects to the female DB9 connector of the RPI, and most computers have either a DB9 or DB25 male connector. Therefore, either a male DB9 to female DB9 or male DB9 to female DB25 cable is usually required. This is a standard cable available at most electronic and computer supply stores.

RPI to Transceiver Cable

The RPI-to-transceiver interface cables for the various E.F. Johnson transceivers are listed in Table 1. These cables plug into either the 10-pin ribbon cable or 8-pin modular jacks of the RPI.

RPI AND EXTERNAL DEVICE POWER

Power to the RPI is normally supplied by the transceiver to which it is connected. Therefore, the

Table 1 RPI-Transceiver Cables

Description	Part No.
585x/586x portable	023-5800-011
5876 portable	023-5810-011
71xx mobile	023-5800-011
8200-series portable	---
856x/858x portable	023-5810-011
86xx mobile (except 8625/8630)	597-2002-200
8625/8630 mobile	597-4001-090
96xx/97xx Viking/Summit	023-9750-005
9800-series mobile	597-2002-200
Remote Control Unit (250-8610-5xx)	597-2002-200

power jack on the back panel is normally not used. In some applications, power may not be provided by the external device. In this case, an in-line power supply can be plugged into the RPI power jack. E.F. Johnson In-line Power Supply, Part No. 563-0001-005, can be used or any power supply that provides 9-16 volts DC at 200 mA.

NOTE: The DC power input is polarity insensitive. Therefore, the RPI operates properly when either polarity is used.

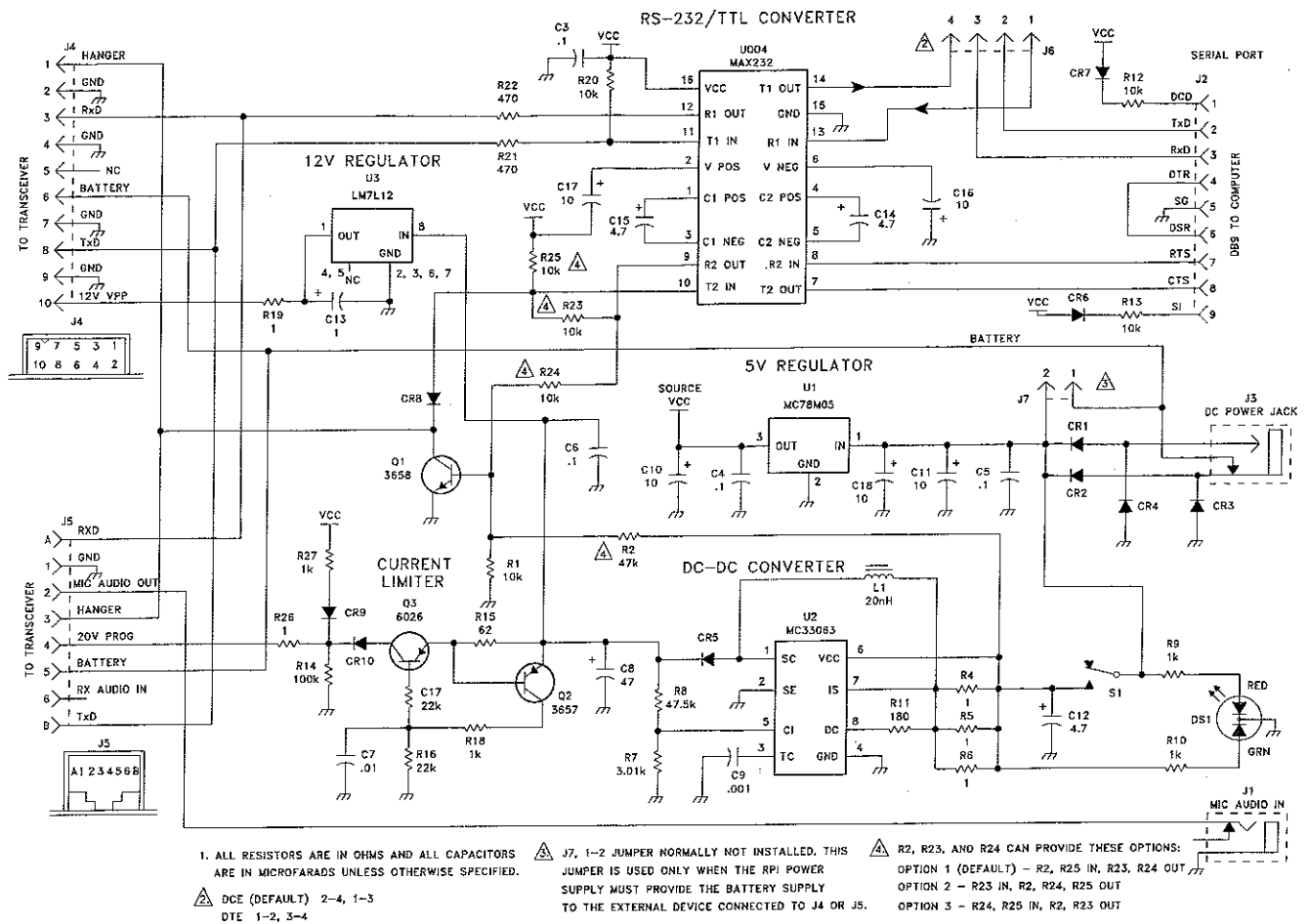
When an in-line power supply is connected to the RPI, it can also provide power to the external device being programmed, if necessary. To do this, install a jumper across J7, pins 1 and 2.

CAUTION

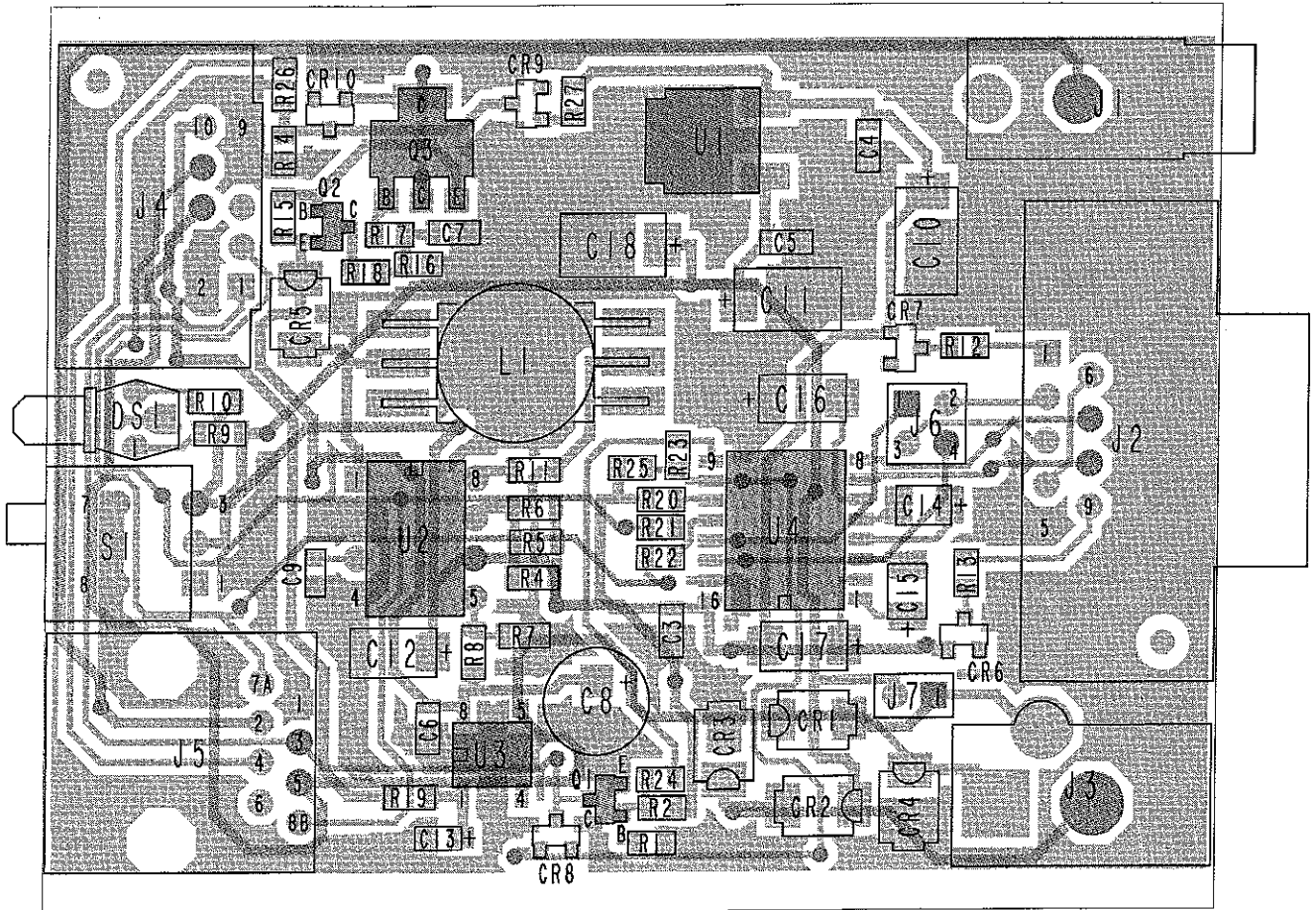
Do not install this jumper and use the in-line supply when programming a transceiver because damage to the transceiver may result.

CONFIGURING DCE/DTE JUMPERS

Jumper plugs across the J3 pins configure the RxD and TxD lines of the serial port for DCE (Data Communications Equipment) or DTE (Data Terminal Equipment). Usually, computers are the DCE type and the factory default configuration (2-4, 1-3) does not need to be changed. However, if your computer is the DTE type, reconfiguration to 1-2, 3-4 may be necessary. Refer to Note 2 on the schematic diagram and to the board layout to set these jumpers.



RPI PC BOARD TOP VIEW



RPI (PART NO. 023-9800-000) SCHEMATIC DIAGRAM

Ref No.	Description	Part No.
REMOTE PROGRAMMING INTERFACE		
Part No. 023-9800-000		
C 003	.1 μ F X7R \pm 10% 50V smd	510-3606-104
C 004	.1 μ F X7R \pm 10% 50V smd	510-3606-104
C 005	.1 μ F X7R \pm 10% 50V smd	510-3606-104
C 006	.1 μ F X7R \pm 10% 50V smd	510-3606-104
C 007	.1 μ F X7R \pm 10% 50V smd	510-3606-104
C 008	47 μ F 25V electrolytic	510-4425-470
C 009	.001 μ F NPO \pm 5% 50V cer smd	510-3601-102
C 010	10 μ F 25V tantalum smd	510-2627-100
C 011	10 μ F 25V tantalum smd	510-2627-100
C 012	4.7 μ F 20v tantalum smd	510-2626-479
C 013	1.0 μ F 16V tantalum smd	510-2625-109
C 014	4.7 μ F 10V tantalum smd	510-2624-479
C 015	4.7 μ F 10V tantalum smd	510-2624-479
C 016	10 μ F 16V tantalum smd	510-2625-100
C 017	10 μ F 16V tantalum smd	510-2625-100
C 018	10 μ F 25V tantalum smd	510-2627-100
CR001	Schottky diode, 1A/100V	523-0519-031
CR002	Schottky diode, 1A/100V	523-0519-031
CR003	Schottky diode, 1A/100V	523-0519-031
CR004	Schottky diode, 1A/100V	523-0519-031
CR005	Schottky diode, 1A/100V	523-0519-031
CR006	Switching diode SOT-23	523-1504-002
CR007	Switching diode SOT-23	523-1504-002
CR008	Switching diode SOT-23	523-1504-002
CR009	Switching diode SOT-23	523-1504-002
CR010	Switching diode SOT-23	523-1504-002
DS001	LED, red/green	549-4006-001
HW001	Enclosure, extruded	014-0777-020
HW006	Screw, 4-40 x 1/4" pan head	575-0604-008
HW012	Polarizing key	515-7109-010
J 001	3.6 mm jack (mic audio)	515-2001-011
J 002	Connector, 9-pin (DB9 serial)	515-0506-043
J 003	Power jack, PC mount	515-2007-010
J 004	Connector, 10-pin male	515-7104-005
J 005	Modular jack, 8-pin special	515-2006-040
J 006	Connector, 4-pin dbl row male	515-7101-402
J 007	Connector, 2-pin male	515-7100-002

Ref No.	Description	Part No.
L 001	20 μ H 1A	542-5010-011
MP 002	Front plate (LED/sw end)	017-2206-018
MP 003	Back plate (DB9 jack end)	017-2206-019
MP 007	Hex spacer, 4-40 male/female	013-1160-103
NP 001	Label, RPI	559-3370-004
P 003	Shorting socket, 2-pin	515-5010-001
PC001	PC board, RPI	035-9800-010
Q 001	NPN general purpose	576-0003-658
Q 002	NPN general purpose	576-0003-657
Q 003	PNP high current switch	576-0006-026
R 001	10k ohm \pm 5% 1/8W smd	569-0105-103
R 002	47k ohm \pm 5% 1/8W smd	569-0105-473
R 004	1 ohm \pm 10% 1/8W smd	569-0115-109
R 005	1 ohm \pm 10% 1/8W smd	569-0115-109
R 006	1 ohm \pm 10% 1/8W smd	569-0115-109
R 007	3.01k \pm 1% 1/8W smd	569-0111-347
R 008	47.5k \pm 1% 1/8W smd	569-0111-466
R 009	1k ohm \pm 5% 1/8W smd	569-0115-102
R 010	1k ohm \pm 5% 1/8W smd	569-0115-102
R 011	180 ohm \pm 5% 1/8W smd	569-0115-181
R 012	10k ohm \pm 5% 1/8W smd	569-0105-103
R 013	10k ohm \pm 5% 1/8W smd	569-0105-103
R 014	100k ohm \pm 5% 1/8W smd	569-0105-104
R 015	62 ohm \pm 5% 1/8W smd	569-0115-620
R 016	22k ohm \pm 5% 1/8W smd	569-0105-223
R 017	22k ohm \pm 5% 1/8W smd	569-0105-223
R 018	1.0k ohm \pm 5% 1/8W smd	569-0105-102
R 019	1 ohm \pm 10% 1/8W smd	569-0115-109
R 020	10k ohm \pm 5% 1/8W smd	569-0105-103
R 021	470 ohm \pm 5% 1/8W smd	569-0105-471
R 022	470 ohm \pm 5% 1/8W smd	569-0105-471
R 025	10k ohm \pm 5% 1/8W smd	569-0105-103
R 026	1 ohm \pm 10% 1/8W smd	569-0115-109
R 027	1k ohm \pm 5% 1/8W smd	569-0115-102
S 001	Slide switch, SPDT	583-3012-001
U 001	Regulator, 5V 1/2A 78M05	544-2003-079
U 002	DC-DC converter MC33063	544-4006-004
U 003	Regulator, 12V LM78L12ACM	544-2603-032
U 004	RS232 rx/tx dual MAX232	544-2023-019

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